



200 Aldington Road Industrial Estate

Lot E Warehouse Construction Noise and Vibration Management Plan

Stockland Fife Kemps Creek Pty Ltd

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v1.0	3 October 2025	Antony Williams	Steven Luzuriaga	Antony Williams

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Stockland Fife Kemps Creek Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

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Table of Contents

Basis of Report	i
Acronyms and Abbreviations	iv
1.0 Introduction	1
1.1 Procedure for Implementing this CNVMP	1
2.0 Development Overview	2
2.1 Nearest Sensitive Receivers.....	4
3.0 Development Consent.....	6
4.0 Existing Environment.....	10
5.0 Assessment Criteria.....	11
5.1 Interim Construction Noise Guideline	11
5.1.1 NML Summary	12
5.2 Construction Road Traffic Noise Guidelines	13
5.3 Construction Vibration Criteria.....	13
5.3.1 Heritage Buildings or Structures	15
5.3.2 Minimum Working Distances for Vibration Intensive Works	15
6.0 Assessment Methodology	17
6.1 Works Description	17
6.1.1 Work Scenarios	17
6.2 Hours of Construction.....	17
7.0 Construction Noise and Vibration Assessment	19
7.1 Construction Noise Predictions.....	19
7.2 Construction Vibration	21
8.0 Mitigation and Management Measures	23
8.1 Standard Mitigation and Management Measures.....	23
8.2 Monitoring	25
8.2.1 Confirmation of Construction Activities Prior to Commencement	25
8.2.2 Construction Noise Monitoring.....	25
8.2.3 Construction Vibration Monitoring.....	26
8.2.4 Monitoring Reports	27
8.3 Complaints Management.....	27
8.4 Consultation Strategy to Manage High Noise Generating Works.....	28
8.5 Contingency Plan	28
8.6 Internal Audits	29
8.7 Roles and Responsibilities	29
8.7.1 Contractor's Project Manager	29



8.7.2 Site Environmental Representative	30
8.7.3 All Workers on Site.....	30
8.8 Potential Cumulative Impacts in Mamre Road Precinct	30
9.0 Review and Improvement of Noise Management Plan	31

Tables in Text

Table 1 Nearest Sensitive Receivers	5
Table 2 Development Consent Conditions.....	6
Table 3 Summary of Unattended Ambient Noise Levels.....	10
Table 4 ICNG NMLs for Residential Receivers	11
Table 5 NMLs for 'Other Sensitive' Receivers.....	12
Table 6 Project Specific Noise Management Levels (dBA)	12
Table 7 RNP Criteria for Assessing Construction Vehicles on Public Roads	13
Table 8 Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration	14
Table 9 Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage.....	14
Table 10 Transient Vibration Guide Values - Minimal Risk of Cosmetic Damage	14
Table 11 Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures	15
Table 12 Recommended Minimum Working Distances from Vibration Intensive Equipment	16
Table 13 Construction Scenario Descriptions	17
Table 14 Exceedance Bands and Impact Colouring	19
Table 15: Construction Noise Predictions at Sensitive Receivers	20
Table 16 Environmental Management Controls for Construction Noise and Vibration	23
Table 17 Contingency Management Plan	29

Figures in Text

Figure 1 Site Location and Surrounding Sensitive Receivers Areas.....	3
Figure 2 ARIE Concept Master Plan Design	4
Figure 3 Construction Vibration – 12 T Vibratory Roller	22

Appendices

Appendix A Acoustic Terminology
Appendix B Construction Information
Appendix C Evidence of Consultation



Acronyms and Abbreviations

AS	Australian Standards
ARIE	200 Aldington Road Industrial Estate
BAPS	Bochasanwasi Shri Akshar Purushottam Swaminarayan Sanstha
BS	British Standard
CEMP	Construction Environmental Management Plan
CMP	Construction Management Plan
CNVG	Construction Noise and Vibration Guideline
CNVIA	Construction Noise and Vibration Impact Assessment
CNVMP	Construction Noise and Vibration Management Plan
dB	Decibel
dBA	A-weighted decibel (referenced 20 µPa)
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
ICNG	Interim Construction Noise Guideline
ISO	International Organization for Standardization
kHz	Kilohertz
LAeq	Equivalent continuous noise level, providing a representation of the cumulative level of noise exposure over a defined period.
m	Metres
Master Plan	Concept Master Plan
NIA	Noise Impact Assessment
NMLs	Noise Management Levels
NPfI	Noise Policy for Industry
NSW	New South Wales
SLR	SLR Consulting Australia Pty Ltd
SSD	State Significant Development
SSDA	State Significant Development Application
TfNSW	Transport for NSW



1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Stockland Fife Kemps Creek Pty Ltd (SKFC) to prepare a Construction Noise and Vibration Management Plan (CNVMP) for construction works associated with the development of 200 Aldington Road, Kemps Creek, NSW.

This CNVMP addresses the potential noise and vibration impacts associated with the construction of Lot E.

Construction noise and vibration impacts from the project were previously assessed in:

- The Noise Impact Assessment prepared by White Noise Acoustics as part of the SSD-10479 application, reference '*Report 20141_200819, Revision 8*', dated August 2022 (the SSDA NIA).
- The Stage 1 CNVMP prepared by SLR Consulting, reference '*610.31010.00000-R01-v1.2 – Stage 1: Demolition, Earthworks and Infrastructure Works – Construction Noise and Vibration Management Plan*', dated August 2023 (the Stage 1 CNVMP).
- The Lot E SSD Noise and Vibration Impact Assessment prepared by SLR Consulting, reference '*610.31010.00000-R11 – SSD-10479 Modification 6, Noise and Vibration Impact Assessment and SSDA for Lot E (SSD-85510213)*', dated October 2025 (the Lot E NVIA).

Specific acoustic terminology is used in this report. An explanation of common acoustic terms is provided in **Appendix A**.

SLR is suitably qualified to produce this CNVMP and SLR staff are members of the Australian Acoustical Society (AAS). SLR is also a member firm of the Association of Australasian Acoustical Consultants (AAAC).

1.1 Procedure for Implementing this CNVMP

This general procedure will be followed in order to implement this CNVMP:

- 1 Review the requirements of the Development Consent Conditions relevant to construction noise and vibration (refer to **Section 3.0**), the location of the nearest sensitive receivers (refer to **Section 2.1**) and the applicable Noise Management Levels (NMLs) (refer to **Section 5.1.1**).
- 2 Prior to commencement of construction phases/activities, confirm the assumptions regarding construction activities/locations/equipment/methodology detailed in **Section 6.0** are accurate and remain valid. Where different methodology or equipment is proposed, further validation of the predicted noise levels will be undertaken in accordance with **Section 8.2**.
- 3 Review the predicted noise levels for the proposed construction activities (refer to **Section 7.1** and any updated assessment undertaken in step 2) to confirm the predicted impacts for each activity. Each activity has “worst case” noise level predictions using the noisiest equipment for that activity.
- 4 Where the noise impacts are predicted to be:
 - Below the relevant NMLs – undertake best practice noise management measures to minimise noise impacts
 - Above the NMLs – implement all feasible and reasonable noise mitigation and management measures relevant to that activity (refer to **Section 8.0**) to reduce



the impacts (to below the NMLs where possible). Measures considered/implemented must be documented for inclusion in the Construction Contractor's Monthly Report.

- Above 75 dBA – implement mitigation and management measures for highly noise affected receivers as per **Section 8.0** including consideration of respite periods, duration respite, and alternative accommodation. Consultation with the individual highly noise affected residences must be undertaken to discuss the appropriate mitigation/respite solution for high noise works and must be documented for inclusion in the Construction Contractor's Monthly Report.
- 5 Review the minimum working distances for vibration intensive plant (refer to **Section 5.3.2**) and the vibration assessment results (refer to **Section 7.2**). Where vibration intensive plant is proposed to be used within the minimum working distances of vibration sensitive structures/receivers implement feasible and reasonable mitigation and management measures as per **Section 8.0**.
- 6 Undertake noise and/or vibration monitoring in accordance with **Section 8.2**, where required.
- 7 Where works are required out of the standard construction hours, additional assessment and documentation must be prepared for approval by the Planning Secretary (refer to **Section 6.2**).
- 8 Resolve any noise/vibration issues during construction works as per the contingency plan (refer to **Section 8.5**), and document and report incidents and complaints as per the requirements in **Section 8.0**.

2.0 Development Overview

200 Aldington Road Industrial Estate (ARIE) is legally described as Lots 20-23 in DP 255560 and Lots 30-32 in DP 258949, which is located on the east side of Aldington Road, Kemps Creek, with an area of approximately 72.08 hectares (ha) within the Penrith Local Government Area.

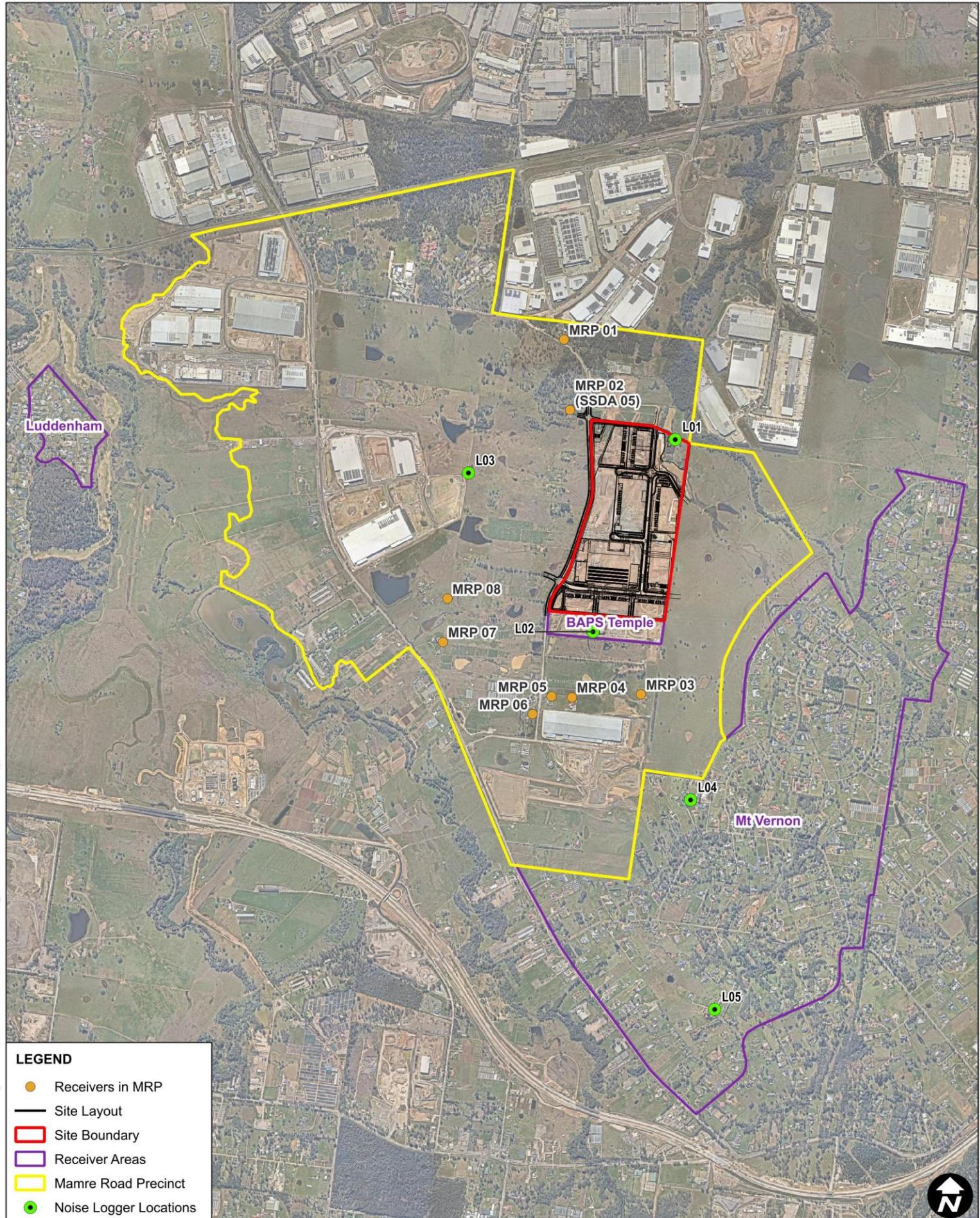
The estate has around 1,242 m of direct frontage to Aldington Road with one proposed signalised intersection providing vehicular access to the southern side of the development, with a three-way junction (designed for future signalised 4 way intersection) providing access to the northern side of the development. Until the connection of Aldington Road to the future Southern Link Road (located to the north) is constructed, the access to Aldington Road will be provided from Abbots Road.

The site is located approximately 4 km north-west of the future Western Sydney Nancy-Bird Walton Airport, 13 km south-east of the Penrith CBD and 40 km west of the Sydney CBD.

The site is part of the Broader Western Sydney Employment Area and is zoned land under the State Environmental Planning Policy (Industry & Employment) 2021 (SEPP 2021).

The ARIE and surrounding receivers are shown in **Figure 1**. The ARIE Master Plan design is shown **Figure 2**.





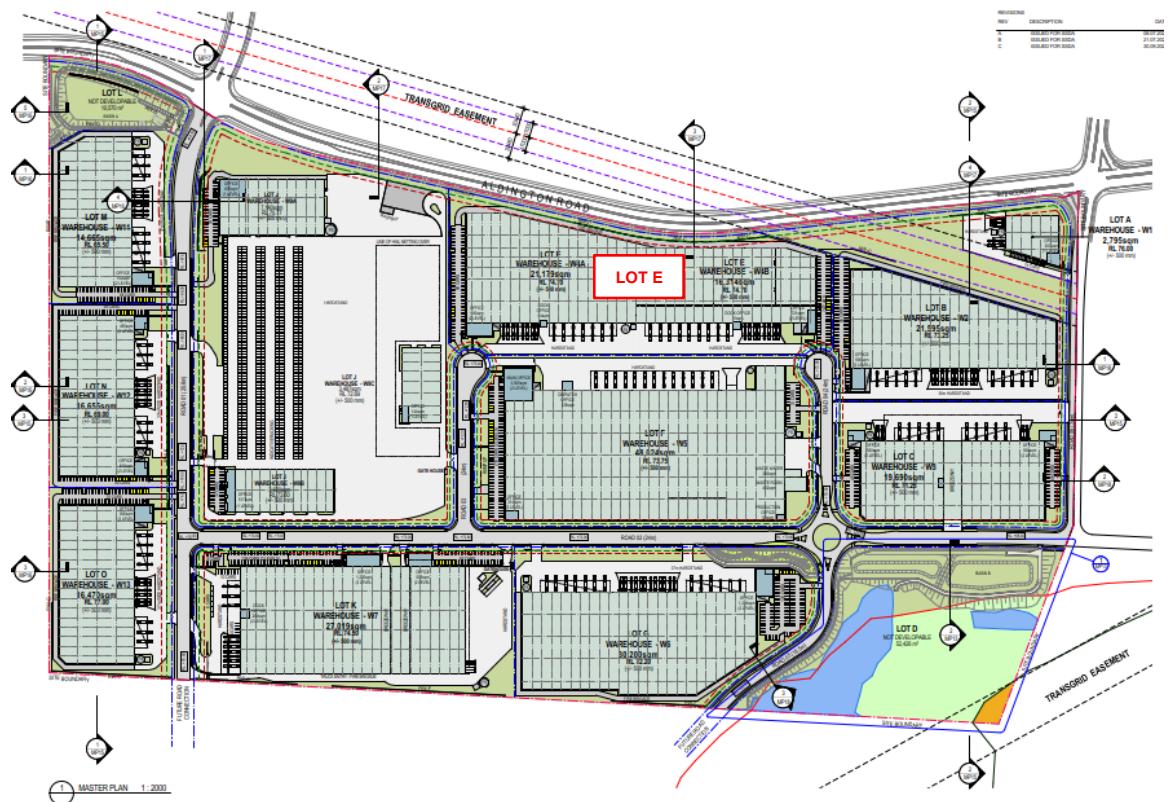
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Nearmap Imagery

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SITE PLAN

FIGURE 1

Figure 2 ARIE Concept Master Plan Design



2.1 Nearest Sensitive Receivers

The nearest receivers surrounding the site are detailed in **Table 1** and shown in **Figure 1**.

It is noted that many of the nearest receivers have been demolished as part of works on other adjacent SSDAs. Receivers which have been demolished have been removed from the assessment.

Table 1 Nearest Sensitive Receivers

NCA/ID	Description	Receiver Type	Approx. Distance (m)
Receivers Within MRP			
MRP 01	Residential receiver	Residential	570
MRP 02 (SSDA NIA 05)	Residential receiver	Residential	200
MRP 03	Residential receiver	Residential	500
MRP 04	Residential receiver	Residential	550
MRP 05	Residential receiver	Residential	550
MRP 06	Residential receiver	Residential	700
MRP 07	Residential receiver	Residential	720
MRP 08	Residential receiver	Residential	690
Receiver Areas Outside MRP			
East Residential	Residences near Mount Vernon Road and Kerrs Road, Mount Vernon	Residential	610
BAPS Temple	232 Aldington Road, Kemps Creek.	Place of Worship	Adjoining southern boundary of site



3.0 Development Consent

This CNVMP has been prepared to accompany the Construction Environmental Management Plan (CEMP) for the construction and fit out of Lot E.

Lot E is not yet approved and the proposal currently has no Consent Conditions. The conditions relevant to this CNVMP have been referenced from ARIE Lot J (SSD-61212208) and are reproduced in **Table 2**. It is expected that this CNVMP would be updated as needed when Consent Conditions are available.

Table 2 Development Consent Conditions

Development Consent	Where Addressed
Utilities, Services and Public Infrastructure	
A18. Prior to the commencement of construction of the development, the Applicant must: <ul style="list-style-type: none"> a) consult with the relevant owner and provider of services or public infrastructure that are likely to be affected by the development or that need to be installed as part of the development, to make suitable arrangements for relevant approvals, access to, diversion, protection and support of the affected services or infrastructure; b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths); and c) submit a copy of the dilapidation report to the Planning Secretary and Council 	Section 8.1
Operation of Plant and Equipment	
A31. All plant and equipment used on site, or to monitor the performance of the development, must be: <ul style="list-style-type: none"> d) maintained in a proper and efficient condition; and e) operated in a proper and efficient manner. 	Section 8.1
Mamre Road Precinct Working Group	
A40. Prior to the commencement of construction of the development and until all components of the development are constructed and operational, the Applicant must participate in a working group with relevant consent holders in the MRP, to the satisfaction of the Planning Secretary. The purpose of the working group is to consult and coordinate construction works within the MRP to assist with managing and mitigating potential cumulative environmental impacts. The working group must: <ul style="list-style-type: none"> a) comprise at least one representative of the Applicant, the Applicant's ER, and relevant consent holders in the MRP; b) meet periodically throughout the year to discuss, formulate and implement measures or strategies to improve monitoring, coordination of the approved industrial developments in the MRP; c) regularly inform Council, TfNSW, Sydney Water and the Planning Secretary of the outcomes of these meetings and actions to be undertaken by the working group; d) review the performance of approved industrial developments in the MRP and identify trends in the data with respect to cumulative construction traffic, erosion and sediment control, noise, stormwater management and waterway health objectives under the MRP DCP; 	Section 8.8



Development Consent		Where Addressed									
<ul style="list-style-type: none"> e) review community concerns or complaints with respect to environmental management; f) identify interim traffic safety measures to manage construction traffic and how these measures will be coordinated, communicated, funded and monitored in the MRP; and g) provide the Planning Secretary with an update and strategies, if a review under subclause (d) and (e) identifies additional measures and processes are required to be implemented by the working group. 											
Hours of Work											
B19. The Applicant must comply with the hours detailed in Table 1.		Section 6.2									
Table 1 Hours of Work											
<table border="1"> <thead> <tr> <th>Activity</th><th>Day</th><th>Time</th></tr> </thead> <tbody> <tr> <td>Construction</td><td>Monday – Friday</td><td>7 am to 6 pm</td></tr> <tr> <td></td><td>Saturday</td><td>8 am to 1 pm</td></tr> </tbody> </table>			Activity	Day	Time	Construction	Monday – Friday	7 am to 6 pm		Saturday	8 am to 1 pm
Activity	Day	Time									
Construction	Monday – Friday	7 am to 6 pm									
	Saturday	8 am to 1 pm									
B20. Work outside of the hours identified in condition B19 may be undertaken in the following circumstances:		Section 6.2									
<ul style="list-style-type: none"> a) works that are inaudible at the nearest sensitive receivers; b) works agreed to in writing by the Planning Secretary; c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm. 											
Construction Noise Limits											
B21. The development must be constructed to achieve the construction noise management levels detailed in the <i>Interim Construction Noise Guideline</i> (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the Construction Noise and Vibration Management Plan required by condition B22.		Section 1.1, 5.0, 7.1 and 8.0									
Construction Noise Management Plan											
B22. The Applicant must prepare a Construction Noise Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:		This CNVMP									
<ul style="list-style-type: none"> a) be prepared by a suitably qualified and experienced noise expert; b) describe procedures for achieving the noise management levels in EPA's <i>Interim Construction Noise Guideline</i> (DECC, 2009) (as may be updated or replaced from time to time); c) describe the measures to be implemented to manage high noise generating works, such as piling, in close proximity to sensitive receivers and detail the duration of works and respite periods; d) include strategies that have been developed with the community for managing high noise generating works; e) describe the community consultation undertaken to develop the strategies in condition B22(d); and f) include a complaints management system that would be implemented for the duration of the development. 		Section 1.0 Section 1.1 Section 8.0 Refer to CEMP and Section 8.4 Refer to CEMP and Section 8.4 Section 8.3									



Development Consent	Where Addressed
<p>B23. The Applicant must:</p> <ul style="list-style-type: none"> a) not commence construction of the development until the Construction Noise Management Plan required by condition B22 is approved by the Planning Secretary; and b) implement the most recent version of the Construction Noise Management Plan approved by the Planning Secretary for the duration of construction. 	This CNVMP Section 9.0
Vibration Criteria	
<p>B31. Vibration caused by construction at any residence or structure outside the site must be limited to:</p> <ul style="list-style-type: none"> a) for structural damage, the criteria set in the latest version of <i>DIN 4150-3:2016-12 Vibration in Buildings – Part 3: Effects on Structures</i> (German Institute for Standardisation, 2016); and b) for human exposure, the acceptable vibration values set out in the <i>Environmental Noise Management Assessing Vibration: a technical guideline</i> (DEC, 2006) (as may be updated or replaced from time to time). 	Section 5.3, 7.2, 8.1 and 8.2
<p>B32. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition B31.</p>	Section 7.2, 8.1, and 8.2
<p>B33. The limits in conditions B31 and B32 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition C2 of this consent.</p>	Conditions B31 and B32 apply.
Environmental Management	
Management Plan Requirements	
<p>C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <ul style="list-style-type: none"> a) a condition compliance table for that plan; b) detailed baseline data where required; c) details of: <ul style="list-style-type: none"> i. the relevant statutory requirements (including any relevant approval, licence or lease conditions); ii. any relevant limits or performance measures and criteria; and iii. the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; e) a program to monitor and report on the: <ul style="list-style-type: none"> i. impacts and environmental performance of the development; and ii. effectiveness of the management measures set out pursuant to paragraph (d) above; f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; g) a program to investigate and implement ways to improve the environmental performance of the development over time; h) a protocol for managing and reporting any: <ul style="list-style-type: none"> i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); ii. complaint; 	This CNVMP This table Section 4.0 Section 3.0 Section 5.0 Section 7.0 and 8.0 Section 8.0 Section 8.2 Section 8.5 Section 9.0 Section 8.5 Section 8.3 Section 8.5 Section 9.0



Development Consent	Where Addressed
iii. failure to comply with statutory requirements; and i) a protocol for periodic review of the plan. <i>Note: the Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans</i>	
Revision of Strategies, Plans and Programs	
C8. Within three months of: a) the submission of a Compliance Report under condition C14; b) the submission of an incident report under condition C10; c) the submission of an Audit under condition C16; d) the approval of any modification of the conditions of this consent; or e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing of the outcomes of any review.	Section 9.0
C9. If identified as part of the review process (see condition C8) or considered necessary to improve the environmental performance of the development, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C8, or such other timing as agreed by the Planning Secretary. <i>Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.</i>	Section 9.0



4.0 Existing Environment

Unattended noise monitoring was completed as part of previous acoustic assessments in August and October 2020, prior to commencement of construction.

The measured noise levels have been used to determine the existing noise environment and to set the criteria used to assess the potential impacts from the project. The noise monitoring equipment continuously measured existing noise levels in 15-minute periods during the daytime, evening and night-time.

The noise monitoring locations are shown in **Figure 1** and the results are summarised in **Table 3**.

Table 3 Summary of Unattended Ambient Noise Levels

ID	Address	Measured Noise Levels (dBA)					
		Background Noise (RBL)			Average Noise (LAeq)		
		Day	Evening	Night	Day	Evening	Night
L01	Lot 32 DP258949	35 (30 actual)	30 (29 actual)	30 (25 actual)	42	40	33
L02	Lot 18 DP253503	35 (32 actual)	31	30	50	35	35
L03	Lot 56 DP259135	35 (34 actual)	33	30 (29 actual)	44	41	41

Note 1: The assessment periods are the daytime which is 7 am to 6 pm Monday to Saturday and 8 am to 6 pm on Sundays and public holidays, the evening which is 6 pm to 10 pm, and the night-time which is 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sunday and public holidays. See the NSW EPA Noise Policy for Industry (NPfI).

Note 2: Monitoring at locations L01 and L02 taken from White Noise Acoustics report 20141_200819_Noise Impact Assessment_BW_R8c dated 26 August 2022. Monitoring at location L03 taken from SLR report 610.19127-R02-v1.3 dated 1 October 2020.

Note 3: The *Noise Policy for Industry* minimum RBLs have been applied where appropriate.



5.0 Assessment Criteria

5.1 Interim Construction Noise Guideline

The NSW *Interim Construction Noise Guideline* (ICNG) is used to assess and manage impacts from construction noise on residences and other sensitive land uses in NSW.

The ICNG contains procedures for determining project specific Noise Management Levels (NMLs) for sensitive receivers based on the existing background noise in the area. The 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact of the project.

The NMLs are not mandatory limits, however, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

Residential Receivers

The ICNG approach for determining NMLs at residential receivers is shown in **Table 4**.

Table 4 ICNG NMLs for Residential Receivers

Time of Day	NML $L_{Aeq}(15\text{minute})$	How to Apply
Standard Construction Hours Monday to Friday 7:00 am to 6:00 pm Saturday 8:00 am to 1:00 pm No work on Sundays or public holidays	Noise affected $RBL^1 + 10 \text{ dB}$	<ul style="list-style-type: none"> The noise affected level represents the point above which there may be some community reaction to noise Where the predicted or measured $L_{Aeq}(15\text{minute})$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details
	Highly Noise Affected 75 dBA	<ul style="list-style-type: none"> The Highly Noise Affected (HNA) level represents the point above which there may be strong community reaction to noise Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restructuring the hours that the very noisy activities can occur, taking into account: <ul style="list-style-type: none"> Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools or mid-morning or mid-afternoon for works near residences) If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times
Outside Standard Construction Hours	Noise affected $RBL + 5 \text{ dB}$	<ul style="list-style-type: none"> A strong justification would typically be required for works outside the recommended standard hours The proponent should apply all feasible and reasonable work practices to meet the noise affected level Where all feasible and reasonable practises have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community

Note 1: The RBL is the Rating Background Level and the ICNG refers to the calculation procedures in the NSW *Industrial Noise Policy* (INP). The INP has been superseded by the NSW EPA *Noise Policy for Industry* (NPI).



'Other Sensitive' Land Uses and Commercial Receivers

The ICNG NMLs for 'other sensitive' non-residential land uses are shown in **Table 5**.

Table 5 NMLs for 'Other Sensitive' Receivers

Land Use	Noise Management Level $L_{Aeq}(15\text{minute})$ (dBA) (Applied when the property is in use)	
	Internal	External
Classrooms at schools and other educational institutions	45	55 ¹
Worship	45	55 ¹
Commercial	-	70
Industrial	-	75

Note 1: It is assumed that these receivers have windows partially open for ventilation which results in internal noise levels being around 10 dB lower than the external noise level.

Sleep Disturbance

A method for assessing sleep disturbance is contained in the NPfI. Although the NPfI sleep disturbance criteria relates to industrial noise, it is also considered relevant for reviewing potential impacts from construction noise as a screening criteria to identify the need for further assessment. The NPfI notes that a detailed maximum noise level assessment should be undertaken where a project results in night-time noise levels which exceed 52 dBA LAFmax or the prevailing background level plus 15 dB, whichever is the greater.

Works will be undertaken during standard daytime construction hours, in accordance with Condition B19. For works required during out of hours periods, and approved under Condition B20, the sleep disturbance screening level of night-time RBL plus 15 dB will be applied.

5.1.1 NML Summary

The NMLs for the project have been determined in accordance with the requirements of the ICNG and are shown in **Table 6**.

Table 6 Project Specific Noise Management Levels (dBA)

Receiver Type	NML ($L_{Aeq}(15\text{minute})$ – dBA)				Sleep Disturbance Screening Level (L_{Amax} dBA)
	Standard Construction Hours (RBL+10dB)	Out of Hours ² (RBL+5dB)			
		Daytime ¹	Daytime	Evening	Night-time
Residential	45	40	35	35	52
Educational	55	55 (when in use)			-
Worship ³	55	55 (when in use)			-
Commercial	70	70 (when in use)			-
Industrial	75	75 (when in use)			-

Note 1: Daytime out of hours is 7 am to 8 am and 1 pm to 6 pm on Saturday, and 8 am to 6 pm on Sunday and public holidays.

Note 2: Works will be undertaken during standard daytime. Where out of hours works are required and are approved by the Planning Secretary, the out of hours NMLs apply.



Note 3: The BAPS Temple is currently under construction. The temple has been conservative assumed to be operational during the construction of Lot E.

5.2 Construction Road Traffic Noise Guidelines

The potential impacts from construction traffic on public roads are assessed under the NSW EPA *Road Noise Policy* (RNP).

An initial screening test is first applied to evaluate if existing road traffic noise levels are expected to increase by more than 2.0 dB as a result of construction traffic. Where this is considered likely, further assessment is required using the RNP base criteria shown in **Table 7**.

Table 7 RNP Criteria for Assessing Construction Vehicles on Public Roads

Road Category	Type of Project/Land Use	Assessment Criteria (dBA)	
		Daytime (7 am – 10 pm)	Night-time (10 pm – 7 am)
Freeway/ arterial/ sub- arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	LAeq(15hour) 60 (external)	LAeq(9hour) 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	LAeq(1hour) 55 (external)	LAeq(1hour) 50 (external)

Traffic volumes during construction of the project are expected to be up to around 120 light vehicles and 60 heavy vehicles per day. As such, it is anticipated that construction traffic would result in a relatively minimal increase (ie less than 2.0 dB) in the overall traffic noise levels along the construction haulage routes. As such, construction traffic noise impacts have not been assessed further.

5.3 Construction Vibration Criteria

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed (**human comfort**). People can sometimes perceive vibration impacts when vibration generating construction work is located close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA's *Assessing Vibration: a technical guideline* (2006) provides criteria for intermittent vibration based on the Vibration Dose Value (VDV), as shown in **Table 8**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to construction work. No such equipment has been identified in the study area.



- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high, it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 9** and **Table 11**.

Table 8 Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration

Building Type	Assessment Period	Vibration Dose Value ¹ (m/s ^{1.75})	
		Preferred	Maximum
Critical Working Areas (eg operating theatres or laboratories)	Day or night-time	0.10	0.20
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship ²	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.

Note 2: BAPS Temple will not be operational during the construction period applicable to the Stage 1 CNVMP.

Table 9 Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage

Table 10 Transient Vibration Guide Values - Minimal Risk of Cosmetic Damage

Line	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.



Table 11 Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures

Group	Type of Structure	Guideline Values Vibration Velocity (mm/s)				
		Foundation, All Directions at a Frequency of			Topmost Floor, Horizontal	Floor Slabs, Vertical
		1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All frequencies	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 <u>and</u> are of great intrinsic value (eg heritage listed buildings)	3	3 to 8	8 to 10	8	20 ¹

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

5.3.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis but as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 11** can be applied.

No heritage buildings have been identified in the vicinity of the Site.

5.3.2 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in the TfNSW *Construction Noise and Vibration Guideline* (CNVG) and are shown in **Table 12**.

The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA Vibration Guideline). They are based on empirical data which suggests that where works are further from receivers than the quoted minimum distances then impacts are not considered likely.

The minimum working distances for human comfort relate to continuous vibration. For most construction activities, vibration emissions are intermittent and for this reason, higher vibration levels occurring over shorter periods are allowed.



Table 12 Recommended Minimum Working Distances from Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage		Human Response (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
	<200 kN (4–6 tonne)	12 m	15 m	40 m
	<300 kN (7–13 tonne)	15 m	31 m	100 m
	>300 kN (13–18 tonne)	20 m	40 m	100 m
	>300 kN (>18 tonne)	25 m	50 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Large Hydraulic Hammer	1,600 kg (18 to 34 t excavator)	22 m	44 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	5 m to 40 m	20 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	4 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

6.0 Assessment Methodology

The potential construction noise levels from the project have been predicted to the surrounding receivers using the ISO 9613-2 algorithm in SoundPLAN, implemented in accordance with ISO 17534-3. The noise model includes ground topography, ground type, buildings and representative worst-case noise sources from the project.

It is assumed that the Lot F, J and K buildings are built prior to construction of Lot E.

6.1 Works Description

6.1.1 Work Scenarios

Representative scenarios have been developed to assess the likely impacts from the various construction phases of the project. These scenarios are shown in **Table 13** together with a high-level description of each works activity.

Details of the items of plant that would be used during each scenario, together with corresponding sound power levels, are in **Appendix B**.

Table 13 Construction Scenario Descriptions

Ref.	Stage	Description
W1	Site establishment	Site establishment
W2	Stage 1	Underground services installation and connections
W3	Stage 2	Detailed excavation for pad levels and footings
W4	Stage 3	Substructure (foundations and retaining walls)
W5	Stage 4	Superstructure (warehouse and office buildings)
W6	Stage 5	External works (landscaping, fencing, etc)
W7	Stage 6	Fit-out, testing and commissioning

6.2 Hours of Construction

Condition B19 of the Development Consent requires construction activities to be undertaken during the following hours:

- 7:00 am to 6:00 pm, Mondays to Fridays
- 8:00 am to 1:00 pm on Saturdays
- At no time on Sundays or Public Holidays

Works outside of these hours may only be undertaken in the following circumstances (as noted in Condition B20):

- Works that are inaudible at the nearest sensitive receivers
- Works agreed to in writing by the Planning Secretary
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.



Other works that may occur out-of-hours would typically be limited to fit out works inside fully enclosed buildings which would be inaudible at the nearest receivers.

Where noisier internal works or any additional external works are required out-of-hours, a Construction Noise Impact Statement (CNIS) would be prepared detailing the proposed out of hours works activities, predicted noise and vibration impacts, and proposed mitigation and management measures. The CNIS for out-of-hours works, where required, will be provided to the Planning Secretary for approval.



7.0 Construction Noise and Vibration Assessment

7.1 Construction Noise Predictions

The predictions are representative of the highest noise levels that could potentially be experienced at the surrounding receivers when the works are at the closest point. For most construction activities, it is expected that the construction noise levels would frequently be lower than those predicted, as the noise levels presented are based on all items of equipment in each scenario being used concurrently and occurring at the nearest point of the site to each receiver.

The assessment shows the predicted impacts based on the exceedance of the NMLs, as per the categories in **Table 14**.

The assessment uses 'realistic worst-case' scenarios to determine the impacts from the noisiest 15-minute period that are likely to occur for each work scenario, as required by the ICNG. The impacts represent construction noise levels without mitigation applied.

It is noted that the BAPS Temple is currently under construction. The temple has been conservatively assumed to be operational during the construction of Lot E.

Table 14 Exceedance Bands and Impact Colouring

Exceedance of NML	Subjective Classification	Impact Colouring
No exceedance	Negligible	
1 to 10 dB	Low impact	
11 dB to 20 dB	Moderate impact	
21 dB to 30 dB	High impact	
Highly Noise Affected ¹	Highly Noise Affected	

Note 1: Greater than 75 dBA at residential receivers.

The predicted noise impacts for the assessed construction scenarios are shown in **Table 15**. A noise contour map of the worst-case results are shown in **Appendix B**.



Table 15: Construction Noise Predictions at Sensitive Receivers

Receiver	NML (dBA)	Predicted L _{Aeq} (15minute) Construction Noise Impact (dBA)						
		W1	W2	W3	W4	W5	W6	W7
		Site Establishment	Stage 1 Services	Stage 2 Excavation	Stage 3 Substructure	Stage 4 Superstructure	Stage 5 External Works	Stage 6 Fit out
MRP 01	45	39	35	40	36	37	32	26
MRP 02	45	47	43	48	44	45	40	34
MRP 03	45	35	31	36	32	35	28	24
MRP 04	45	38	34	39	35	38	31	27
MRP 05	45	38	34	39	35	37	31	26
MRP 06	45	35	31	36	32	34	28	23
MRP 07	45	36	32	37	33	34	29	23
MRP 08	45	37	33	38	34	36	30	25
East ¹	45	37	33	38	34	37	30	26
BAPS	55	42	38	43	39	41	35	30

Note 1: Highest predicted level shown for nearest receivers to the east of the site, at Mt. Vernon Road, Capitol Hill & Kerrs Road, Mt. Vernon.

The assessment of the worst-case construction noise levels shows:

- Noise levels at the surrounding receivers are expected to comply with the NMLs during the majority of works.
- Low impact exceedances of 2 to 3 dB are predicted at one residential receiver (ie MRP 02 to the north west) during the two noisiest activities (ie W1 – Site Establishment and W3 – Stage 2 Excavation). Noise levels at all other residential receivers are predicted to be below the NMLs.
- The highest predicted noise level at any residential receiver is 48 dBA. The highest predicted level at any 'other sensitive' receiver is 43 dBA at the BAPS Temple.
- Individual receivers would be subject to a large range of worst-case impacts, depending on how far from the works they are. The highest impacts would be apparent when works occur closest to the receiver. Noise level would be significantly lower when works move further away from a particular receiver.

A contour plot showing the worst-case predictions is shown in **Appendix B** for W3 – Stage 2 Excavation, which is the scenario with the highest predicted noise impacts.

Construction mitigation measures are discussed in **Section 8.0**.



7.2 Construction Vibration

The major potential sources of vibration from the proposed construction activities would likely be during 'W1 – Site establishment' when vibratory rollers are being used.

Vibration offset distances have been determined from the CNVG minimum working distances for cosmetic damage and human comfort (see **Table 12**) and the assessment for a vibratory roller is summarised in **Figure 3**.

The figure show that the distance between the construction work and the nearest sensitive receivers is sufficient for all receiver buildings to be outside of the cosmetic damage and human comfort minimum working distances for vibration intensive equipment.





Sheet Size: A4

Data Source:
 Nearmap Imagery May 2025

DISCLAIMER: All information within this document may be based
 on external sources. SLR Consulting Pty Ltd makes no warranty
 regarding the data's accuracy or reliability for any purpose.

CONSTRUCTION VIBRATION

SLR

FIGURE 3

8.0 Mitigation and Management Measures

The ICNG acknowledges that due to the nature of construction works it is inevitable that there will be impacts where construction is near to sensitive receivers.

Noise during construction of Lot E is generally predicted to be below the Noise Management Levels, except for low impact exceedances at one residential receiver during the noisiest activities.

Notwithstanding, all appropriate feasible and reasonable mitigation measures should be applied to the work to minimise the potential impacts, as far as practicable.

8.1 Standard Mitigation and Management Measures

The mitigation and management measures that would be applied to the project are detailed in **Table 16**.

Table 16 Environmental Management Controls for Construction Noise and Vibration

Measure	Person Responsible	Timing / Frequency	Reference / Notes
Project Planning			
Consult with the relevant owner and provider of services or public infrastructure that are likely to be affected by the development or that need to be installed as part of the development, to make suitable arrangements for relevant approvals, access to, diversion, protection and support of the affected services or infrastructure;	Project Manager	Ongoing	Best practice
Use quieter and less vibration emitting construction methods where feasible and reasonable.	Project Manager	Ongoing	Best practice
Works will be completed during standard daytime construction hours outlined in Section 6.2 .			
Truck routes to site will be limited to major roads.			
Site Layout			
Compounds and worksites will be designed to promote one-way traffic and minimise the need for vehicle reversing.	Project Manager	Ongoing	Best practice
Where practicable, work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.			
Documentation of how site layout has been considered to reduce noise impacts must be provided to the Contractor's Project Manager. This must occur any time there are significant changes to the site layout.			
Equipment that is noisy will be started away from sensitive receivers			



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Training			
Training will be provided to all personnel on noise and vibration requirements for the project. Inductions and toolbox talks to be used to inform personnel of the location and sensitivity of surrounding receivers.	Project Manager	Ongoing	Best practice
Plant and Equipment Source Mitigation			
All plant and equipment must be maintained in a proper and efficient condition, operated in a proper and efficient manner, and feature standard noise amelioration measures where applicable (refer Consent Condition A31).	Project Manager	Ongoing	Best practice, Condition A31
Where practicable, tonal reversing alarms (beepers) will be replaced with non-tonal alarms (squawkers) on all equipment in use (subject to occupational health and safety requirements).			
Noisy equipment will be sited behind structures that act as barriers, or at the greatest distance from the noise-sensitive area. Equipment will be oriented so that noise emissions are directed away from any sensitive areas, where possible.			
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/enclosures regularly to ensure that seals are in good condition and doors close properly against seals.			
Noise monitoring spot checks of equipment will be completed to ensure individual items are operating as expected			
Dropping materials from a height will be avoided.			
Loading and unloading will be carried out away from noise sensitive areas, where practicable.			
Trucks will not queue outside residential properties. Truck drivers will avoid compression braking as far as practicable.			
Truck movements will be kept to a minimum, ie trucks are fully loaded on each trip.			
Screening			
The layout of the site will take advantage of existing screening from local topography, where possible. Site huts, maintenance sheds and/or containers will be positioned between noisy equipment and the affected receivers.	Project Manager	Ongoing	Best practice
Complaints Management			
Where complaints are received, work practices will be reviewed and feasible and reasonable practices implemented to minimise any further impacts. Refer to Section 8.3 .	Communications and Community Liaison Representative	Ongoing	Best practice



Measure	Person Responsible	Timing / Frequency	Reference / Notes
Monitoring			
Noise and/or vibration monitoring will be conducted (as appropriate) when noise/vibration intensive works are being undertaken in close proximity to sensitive receivers.	Environmental Coordinator	Ongoing	Best practice
Noise and/or vibration monitoring will be conducted (as appropriate) in response to any complaints received to verify that levels are not substantially above the predicted levels.			
Refer to Section 8.2 for full details of monitoring requirements.			
Vibration			
If vibration generating works are required within the minimum cosmetic damage working distances (refer Table 12) and considered likely to exceed the criteria: <ul style="list-style-type: none"> - Different construction methods with lower source vibration levels will be investigated and implemented, where feasible - Attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels at the item. Works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria. 	Environmental Coordinator	Ongoing	Best practice, Conditions B31, B32 and A18(b)
Where works are required within the cosmetic damage minimum working distances (refer Table 12), building condition surveys and public infrastructure dilapidation surveys (refer Condition A18(b)) will be completed before and after the works to ensure no cosmetic damage has occurred.			

8.2 Monitoring

Condition C1(e) requires management plans to include a program to monitor and report on the impacts and environmental performance of the development.

8.2.1 Confirmation of Construction Activities Prior to Commencement

Prior to commencement of construction, the methodology and equipment will be reviewed to confirm that the assumptions in this CNVMP remain valid. Where different methodology or equipment is proposed, further validation of the predicted noise levels will be undertaken to ensure that the proposed mitigation measures are anticipated to be sufficient.

8.2.2 Construction Noise Monitoring

Where feasible, validation of noise levels during high noise works must be measured in advance of commencement of the works, ie test measurements of the equipment undertaking the works for a short period prior full commencement of the works.



Verification monitoring is required to be undertaken prior to the commencement of any proposed out-of-hours works, to verify that construction noise and vibration are consistent with the predictions in this noise assessment, and to ensure that mitigation and management of construction noise and vibration is appropriate for receivers affected by the works. This should be done by undertaking measurements of the equipment required for the works for a short period (during standard construction hours) prior to full commencement of the works.

Attended noise monitoring will also be undertaken in response to any formal complaints. All monitoring will be completed by suitably qualified acoustic specialists. The location and extent of attended monitoring will be determined in consultation with project staff and would be dependent on the activities taking place. A noise monitoring report will be prepared after each attended monitoring survey.

It is also recommended that periodic attended noise measurements be conducted by a competent project team member at representative receiver or site boundary locations to monitor noise levels. This should be done on a monthly basis, and more frequently when significant new plant and equipment arrive on site.

The routine monitoring will take place during the expected noisiest construction periods and be representative / indicative of the impacts at the potentially affected sensitive receivers. A monthly monitoring report will be prepared summarising the measurement results and any relevant site activity observations.

All items of acoustic instrumentation utilised will be designed to comply with IEC 61672-1-2013 *Electroacoustics – Sound level meters* (AS IEC 61672) and carry current calibration certificates.

Real-time noise monitoring will be used on site during construction to ensure noise levels are in line with the predictions. The noise monitoring equipment would be moved around the site as needed based on various factors, including the location and type of works being completed, the prevailing wind direction and the construction activities being completed on other nearby sites (ie the BAPS Temple, Aldington Road Upgrade, construction at The Edge, etc).

8.2.3 Construction Vibration Monitoring

Where vibration intensive works (such as rockbreaking, vibratory rolling or plate compacting) are required within the minimum working distances of sensitive receivers or structures (refer to **Section 5.3.2**), vibration will be monitored continuously for the duration of works within the minimum working distances.

Attended vibration measurements will be undertaken at the start of vibration intensive works within the minimum working distances to confirm the levels of vibration are below the applicable vibration limits (refer to **Section 5.3**).

Vibration monitors will be installed by an acoustic consultant at the closest points of the sensitive structure to the vibration intensive works to continuously monitor vibration for the duration of the works. Should the works location change, the vibration monitors will be relocated to remain at the closest point of the structure to the works.

The vibration monitoring equipment will have visible and audible alarms installed where operators of equipment can see/hear them:

- A warning vibration level of two-thirds (66%) of the applicable vibration limit will trigger a 'warning' alarm if exceeded.
- A 'halt work' alarm will trigger if vibration is measured equal to the applicable vibration limit. Actions to be carried out if the exceedance alarms are triggered are detailed in **Section 8.5**.



Vibration monitoring data will be downloaded and reported at the following timeframes:

- Monthly during works (at a minimum)
- Within one week of an exceedance of the vibration limit alarm level
- Upon completion of vibration monitoring.

All items of vibration instrumentation will be designed to comply with applicable guidelines and carry current calibration certificates.

8.2.4 Monitoring Reports

Noise and/or vibration monitoring reports will be provided to the Environmental Representative (ER) and distributed in accordance with the requirements of the Consent Conditions. Monitoring reports would include the following details, at a minimum:

- Noise/vibration monitoring/measurement locations
- Date, time and length of noise monitoring/measurements
- Weather conditions during the measurements
- Name and position of personnel undertaking measurements
- Construction activities being undertaken during measurements
- Locations of construction equipment and distance from monitoring location
- Measured L_{Aeq} and L_{Amax} noise levels during construction works (for each activity) along with a comparison to the predicted noise levels (noise monitoring only)
- Measured L_{A90} background noise level in absence of the construction works (noise monitoring only)
- Measured vibration levels during construction works (for each activity) along with a comparison to the relevant vibration criteria (vibration monitoring only)
- Measured vibration levels and relevant details of any exceedance of the warning vibration level or vibration limits (vibration monitoring only)
- Measured background vibration level in absence of the construction works (vibration monitoring only)
- Operator observations noting any extraneous noise/vibration sources or other points of relevance.

8.3 Complaints Management

Condition B22(f) requires the CNVMP to include a complaints management system to be implemented for the duration of the development.

The complaints handling procedure is described in the CEMP. This procedure is intended to ensure that the issues are addressed and that appropriate corrective action is identified and implemented as necessary.

Where a complaint is identified to be in relation to construction noise or vibration, the following points should be noted:

- The Project Manager will investigate the complaint in order to determine whether a criterion exceedance has occurred or whether noise has occurred unnecessarily.
- If excessive or unnecessary noise/vibration have been caused, corrective action will be planned and implemented by the construction contractor.



- Complainants will be informed by the Project Manager that their complaints are being addressed, and (if appropriate) that corrective action is being taken.
- Follow up monitoring or other investigations will be carried out by the Project Manager and the construction contractor to confirm the effectiveness of the corrective action.
- Complainants will be informed of the implementation of the corrective action that has been taken to mitigate the adverse effects.

8.4 Consultation Strategy to Manage High Noise Generating Works

Prior to commencement of works, consultation is required to be conducted with surrounding noise sensitive receivers to develop a suitable strategy for managing high noise generating works. A record of consultation carried out with surrounding receivers is included in **Appendix C**.

As detailed in **Section 7.1**, no 'high impact' exceedances of the NMLs are predicted at any of the surrounding receivers during any of the works and no receivers are predicted to be Highly Noise Affected (>75 dBA). As such, it is considered that there are no high noise generating works near sensitive receivers and Consent Conditions B22(d) and (e) do not require specific measures to be implemented.

Notwithstanding, the strategy for managing high noise generating works (should they occur), developed in consultation with receivers noted in **Appendix C**, comprises the following:

- Prior notification of commencement of works
- Provision of site contact details in the event of any concerns regarding noise & vibration from site works
- Provided an opportunity for receivers to personally advise any specific concerns regarding nature, timing or duration of noise generating works
- Timing & duration of any high noise generating works can be adjusted (where feasible and reasonable) in consultation with the receiver following site notification identifying any concerns.

8.5 Contingency Plan

Condition C1(f) requires management plans to include a contingency plan to manage any unpredicted impacts and their consequences.

The following contingency management plan, shown in **Table 17**, would be used to manage noise and vibration impacts that are higher than expected.

Any incident or non-compliance shall be handled and reported in accordance with the CEMP.

The following events constitute an incident in terms of noise and vibration:

- Trigger of Condition Red for noise impacts during the standard construction hours detailed in **Section 6.2**.
- Any works occurring outside the standard construction hours, where those works do not meet the allowable circumstances, including being agreed in writing by the Planning Secretary.
- Trigger of Condition Red for vibration impacts at sensitive receivers.



Table 17 Contingency Management Plan

Key Element	Trigger / Response	Condition Green	Condition Amber	Condition Red
Noise impacts at sensitive receiver locations	Trigger	Noise levels do not exceed applicable NMLs	Noise levels exceed applicable NMLs	Noise levels exceed Highly Noise Affected criteria (75 dBA)
	Response	On-going best practice management measures to minimise noise emissions	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts (aiming to achieve NMLs)	Works exceeding the Highly Noise Affected criteria will be managed in accordance with the strategies for high-noise generating works determined through community consultation, as detailed in Section 8.4 .
Vibration impacts at sensitive receiver locations	Trigger	Vibration intensive works undertaken outside minimum working distance for the specific equipment in use	Vibration intensive works undertaken within minimum working distance for the specific equipment in use	Vibration levels exceed applicable vibration limits
	Response	On-going best practice management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable limits then a different construction method or equipment must be utilised.

8.6 Internal Audits

Periodic internal audits will be conducted to ensure that the development consent conditions and commitments and environmental management controls outlined in this CNVMP are being properly implemented. Audits are to be conducted in accordance with the CEMP.

8.7 Roles and Responsibilities

Overall roles and responsibilities relating to the project are included in the CEMP. The key responsibilities specifically for noise and vibration management are as follows:

8.7.1 Contractor's Project Manager

- Ensuring appropriate resources are available for the implementation of this CNVMP
- Assessing data from inspections and providing project-wide advice to ensure consistent approach and outcomes are achieved
- Providing necessary training for project personnel to cover noise and vibration management
- Reviewing and update of this CNVMP, where necessary



- Commissioning suitably qualified consultants to complete attended noise and vibration monitoring when required by this CNVMP.
- Ensuring competent project team members undertake routine attended noise measurements required by this CNVMP.
- Assessing and (as required) mitigating risks of high noise and vibration levels before commencing works and ensuring that the appropriate controls are implemented
- Ceasing works in the event of excessive noise and vibration generation
- In the event that a noise or vibration complaint is received, implementing the procedure outlined in **Section 8.3**.

8.7.2 Site Environmental Representative

- Coordinating noise and/or vibration monitoring program, where required
- Reviewing control measures in accordance with the CNVMP
- Identifying and reporting any high or non-compliant noise and vibration emissions.

8.7.3 All Workers on Site

- Observing any noise and vibration emission control instructions and procedures that apply to their work
- Taking action to prevent or minimise noise and vibration emission incidents
- Identifying and reporting noise and vibration emission incidents.

8.8 Potential Cumulative Impacts in Mamre Road Precinct

Cumulative impacts can be caused by the compounding effects of multiple projects in an area, and by the accumulation of effects from past, current and future activities as they arise.

Cumulative construction noise impacts can occur where multiple work activities are being completed near to a particular receiver at the same time.

The construction of Lot E forms part of the construction of the Aldington Road Industrial Estate, which is part of the wider Mamre Road Precinct. There is potential for receivers in the area to be subject to increased construction impacts due to cumulative construction of the various stages of Aldington Road Estate, and also from the cumulative construction of the various development sites within the Mamre Road Precinct.



In response to this, the Mamre Road Precinct (MRP) Working Group has been established which includes the following members (which are the main developers in the MRP):

- Mirvac Project Pty Ltd (SSD-10448)
- ESR Developments (Australia) Pty Ltd (SSD-9138102)
- Stockland Fife Kemps Creek Pty Ltd (SSD-10479)
- GPT Pty Ltd (SSD-10272349)
- Barings Real Estate Australia (SSD-17641789)

The MRP Working Group (as required by Condition A40) aims to ensure regular communication and cooperation between the main developers of the MRP, with shared commitments across the group (such as a Driver Code of Conduct and regular noise/vibration monitoring, where appropriate) to ensure that potential cumulative impacts from the MRP are minimise as far as possible.

9.0 Review and Improvement of Noise Management Plan

Condition C1(g) requires management plans to include a program to investigate and implement ways to improve the environmental performance of the development over time.

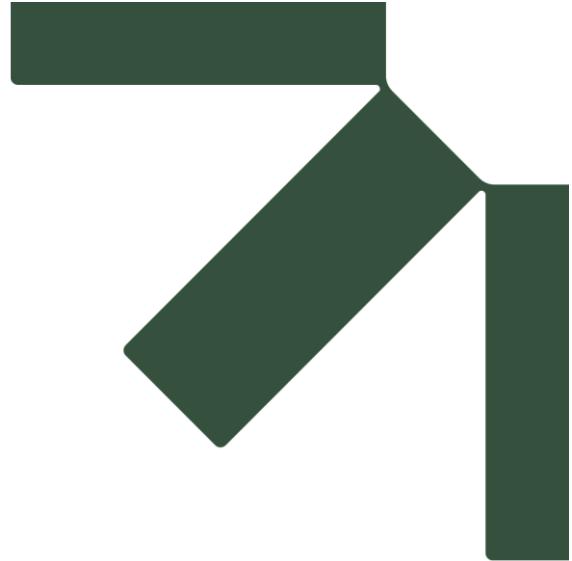
Reviews, investigations, and improvements to this plan and the environmental performance shall be undertaken in accordance with the CEMP.

This CNVMP will be reviewed, and if necessary, updated in the following circumstances:

- Significant changes to the equipment, machinery and plant operated within the site
- Where it is identified via monitoring that the performance of the project is not meeting the objectives of the CNVMP
- When required by Condition C8.

All employees and contractors will be informed of any revisions to the CNVMP by Site Management during toolbox talks. The most recent version of the CNVMP as approved by the Planning Secretary, will be implemented for the duration of construction works.





Appendix A Acoustic Terminology

200 Aldington Road Industrial Estate

**Lot E Warehouse
Construction Noise and Vibration Management Plan**

Stockland Fife Kemps Creek Pty Ltd

SLR Project No.: 610.033031.00001

3 October 2025

1. Sound Level or Noise Level

The terms 'sound' and 'noise' are almost interchangeable, except that 'noise' often refers to unwanted sound. Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is 2×10^{-5} Pa.

2. 'A' Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People's hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to quiet
50	General Office	
40	Inside private office	Quiet to very quiet
30	Inside bedroom	
20	Recording studio	Almost silent

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as 'linear', and the units are expressed as dB(lin) or dB.

3. Sound Power Level

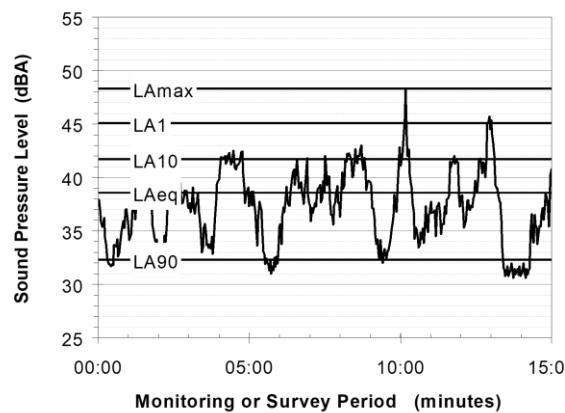
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

- LA1 The noise level exceeded for 1% of the 15 minute interval.
- LA10 The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.
- LA90 The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.
- LAeq The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

5. Frequency Analysis

Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

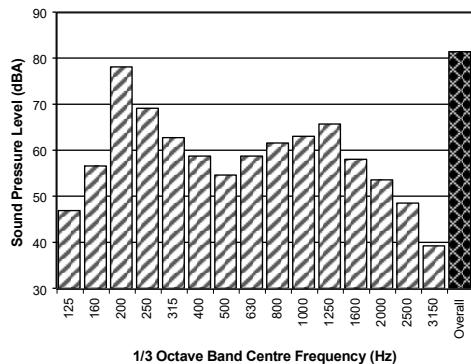
The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)
- Narrow band (where the spectrum is divided into 400 or more bands of equal width)



The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

7. Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level V , expressed in mm/s can be converted to decibels by the formula $20 \log (V/V_0)$, where V_0 is the reference level (10^{-9} m/s). Care is required in this regard, as other reference levels may be used.

8. Human Perception of Vibration

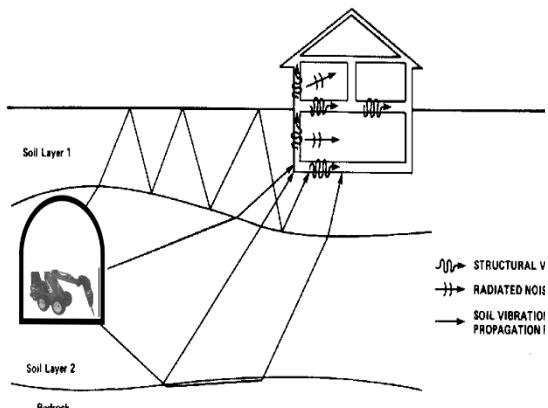
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

9. Ground-borne Noise, Structure-borne Noise and Regenerated Noise

Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

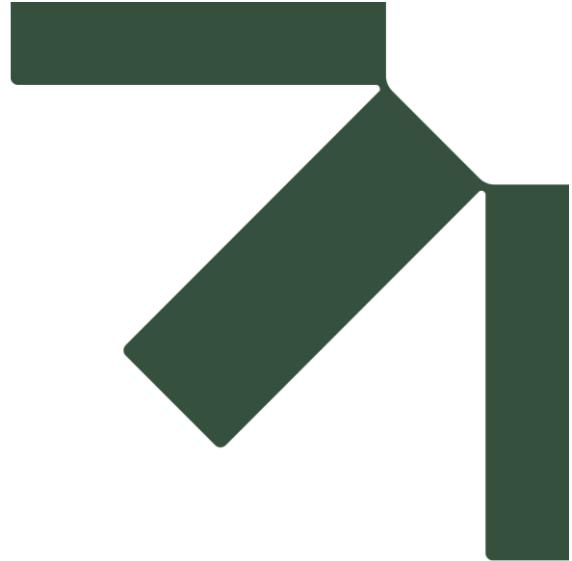
Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. The fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.





Appendix B Construction Information

200 Aldington Road Industrial Estate

**Lot E Warehouse
Construction Noise and Vibration Management Plan**

Stockland Fife Kemps Creek Pty Ltd

SLR Project No.: 610.033031.00001

3 October 2025

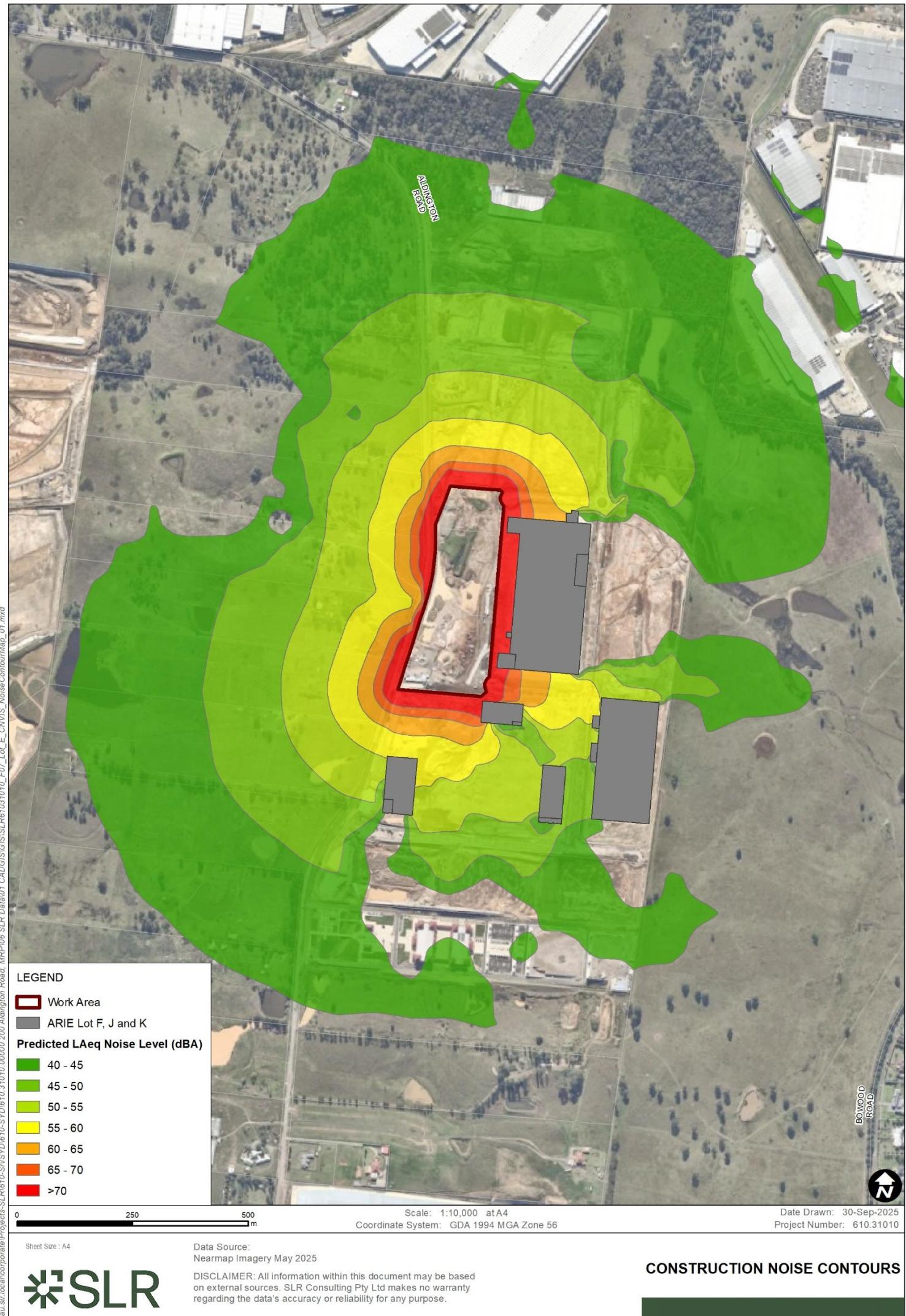
Construction Scenario Descriptions

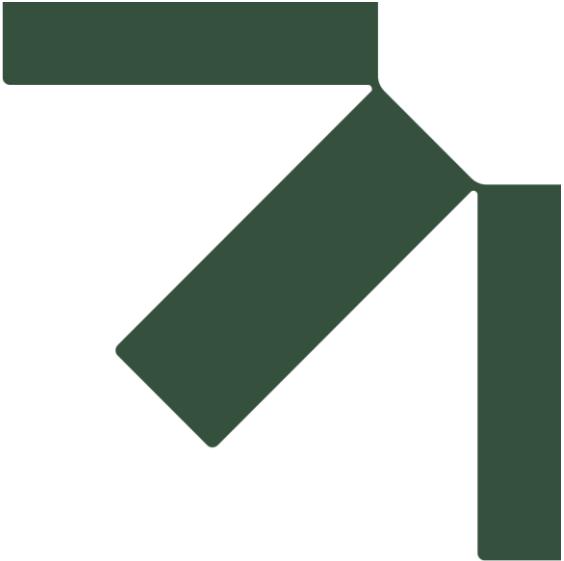
Equipment	Back Hoe (7.5 tonne JCB)	Circular Saw ¹	Concrete Mixer Truck	Concrete Pump	Concrete Vibrator	Elevated Working Platform	Excavator (22 tonne)	Hand Tools	Mobile Crane - Franna	Pneumatic hammer ¹	Roller - Vibratory (12 tonne) ¹	Semi Trailer	Suction Truck	Truck	Ute	Total Sound Power Level (dBA)
Sound Power Level (dBA)	102	106	103	106	102	97	99	94	98	114	109	106	100	107	98	
Assumed On-time	15	15	7.5	7.5	15	15	7.5	15	7.5	5	15	5	15	5	15	
W1 - Site Establishment	X						X				X					110
W2 - Stage 1 - Services	X						X	X						X		106
W3 - Stage 2 - Excavation	X						X	X		X			X	X		111
W4 - Stage 3 - Substructure			X	X			X							X		107
W5 - Stage 4 - Superstructure		X	X	X		X		X	X			X		X		110
W6 - Stage 5 - External works			X					X							X	103
W7 - Stage 6 - Fit out								X							X	99
W8 - OOHW Concrete Pours				X	X			X								106

Note 1: Equipment classed as 'annoying' in the ICNG and requires a 5 dB correction.

Note 2: Sound power level data is taken from the TfNSW *Construction Noise and Vibration Strategy* (CNVG-R and CNVG-PTI), AS2436-2010 and DEFRA Noise Database.







Appendix C Evidence of Consultation

200 Aldington Road Industrial Estate

**Lot E Warehouse
Construction Noise and Vibration Management Plan**

Stockland Fife Kemps Creek Pty Ltd

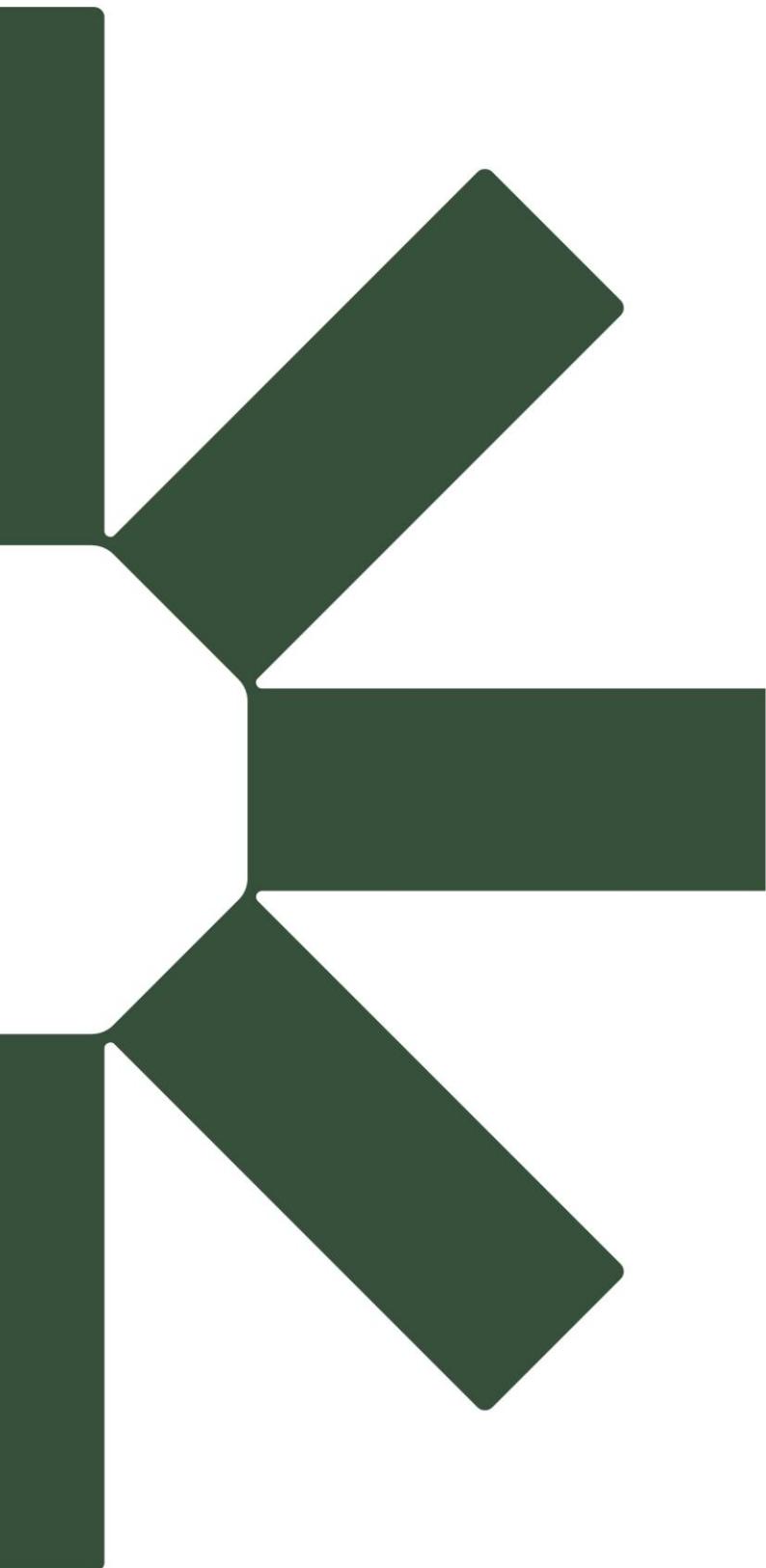
SLR Project No.: 610.033031.00001

3 October 2025

Record of Consultation SSD 10479 200 Aldington Road Estate

Condition A21 Evidence of Consultation

Date	Timing	Time	Location	Developer (initials)	Name	Details	Outcome	Condition		
								D50 Noise	Action	Resolution
22-05-2023	prior to commencement of construction	10:50am	53 Aldington Rd. (Lot 38) Kemps Creek (north west of site)	RH, DM	Ted and partner	Met with the Owner&occupant of 53 Ald to notify them we are starting works in the next month. Provided them with RH contact details for any enquiries.	No concerns/ No unresolved issues. Will notify if issues arise during construction	✓	n/a	Will notify if issues arise during construction
22-05-2023	prior to commencement of construction	11:00am	129 Aldington Road, Kemps Creek (west of site)	RH, DM	Sam J	Met with occupant and notified we will be commencing earthworks on site in the following weeks.	No concerns/ No unresolved issues. Will notify if issues arise during construction	✓	n/a	Will notify if issues arise during construction
22-05-2023	prior to commencement of construction	11:15am	141 Aldington Road, Kemps Creek (west of site)	RH, DM	Mr Orlovic	Met with owner, notified them of commencement of works on 200A and provided contact details.	No concerns/ No unresolved issues. Will notify if issues arise during construction	✓	n/a	Will notify if issues arise during construction
22-05-2023	prior to commencement of construction	11:35am	Oakdale East (to north east of site) – freight company	RH, DM	Representative	Notified representative of owner on commencement of earthworks in following weeks. RH provided contact details to man occupying front desk.	No concerns/ No unresolved issues. Will notify if issues arise during construction	✓	n/a	Will notify if issues arise during construction
23/05/2023 and prior	prior to commencement of construction		Lot 18 BAPS Temple (southern boundary)	RH, DM	David Ashcroft PM, Samir Patel (Owners Rep)	Met with occupant and notified we will be commencing earthworks on site in the following weeks.	No concerns/ No unresolved issues. Will notify if issues arise during construction	✓	n/a	Will notify if issues arise during construction
31/5/23 and prior	prior to commencement of construction		Capital Hill Estate (farmland to east of site)	RH	Capital hill estate/JWP (engr)	Discussed by phone with David Johnstone (consultant) and Dino Selagrio (owner)	No concerns, but if any issues with dust or otherwise will advise.	✓	n/a	Will notify if issues arise during construction



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